**Carboxylic Acids**

Carboxylic acids play a significant role in biochemical processes of life. They add smell and flavour to nature, for example, the very pleasant fragrances of vanillin and cinnamaldehyde.

* Carboxylic acids are found in many common household items: vinegar and salad dressing, citrus fruits, rhubarb, yogurt.
* The feeling that you get in your legs after running for a long time is caused by the build up of the carboxylic acid, “lactic acid”
* Carboxylic acids contain a -COOH group

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| **Naming Scheme:**   * The name counts the total number of carbon atoms in the longest chain - including the one in the -COOH group. * If you have other groups attached to the parent chain, the carbon in the –COOH group is always counted as number 1 on the chain. * They are named by adding –oic acid onto the end of the carbon skeleton. * The substituents are named as in other aliphatic compounds. |

\* **The general formula of a carboxylic acid is R-COOH, where R is the rest of the chain.**

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| **Salts of Carboxylic Acids**   * When the carboxylic acids form salts, the hydrogen in the -COOH group is replaced by a metal. * There is an ionic bond between the metal and the carboxylic group. * In the formula, the sodium is at the end, but appears first in the name. |
| **Reaction Properties**   * Smaller carboxylic acids (1-5 carbons) are polar or soluble with water. Carboxylic acids with higher numbers of carbons are less soluble due to increasing hydrophobic nature of the alkyl chain. * Higher boiling points than water (larger surface area) * Strong odors/weak acids |